



RECEIVED  
NOV 30 2000  
TECH CENTER 1600/200

Sheet 1 of 6

**Form PTO-1449 Modified**

Docket No.  
**ISPA-3292**

Serial No.  
**09/486,623**

List of Patent and Publications  
Cited by Applicant  
(Use several sheets if necessary)

Applicant  
**Peter E. Nielsen, et al.**

U.S. Department of Commerce  
Patent and Trademark Office

Filing Date  
**July 6, 2000**

Group **1631**  
~~1270~~

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

AM	AA	Beran, M., et al., "Substituted $\omega$ -(4-Oxo-3,4-Dihydro-5-Pyrimidinyl) Alkanoic Acids, Their Derivatives and Analogues," <i>Collect. Czech. Chem. Commun.</i> , <b>1983</b> , 48, 292-298
	AB	Brigotti, M., et. al., "Oligonucleotides Complementary to the $\alpha$ -Sarcin Domain of 28S rRNA Inhibit Cell-free Protein Synthesis", <i>Biochem. Mol. Biol. Int.</i> , <b>1993</b> , 31, 897-903
	AC	Chen, H.Z. et al., "Prokaryotic Coupled Transcription-Translation", <i>Methods in Enzymol.</i> , <b>1983</b> , 101, 674-690
	AD	Christensen, L., et. al., "Solid-phase Synthesis of Peptide Nucleic Acids", <i>J. Peptide Sci.</i> , <b>1995</b> , 3, 175-183
	AE	Cundliffe, E., "Recognition Sites for Antibiotics within rRNA", Chapter 41, <i>The Ribosome</i> , Hill et. al. eds., <b>1989</b> , Am. Soc. Microbiol., Washington, D.C., 479-490
	AF	Demidov, V.V. et. al., "Stability of peptide nucleic acids in human serum and cellular extracts", <i>Biochem. Pharmacol.</i> , <b>1994</b> , 48, 1309-1313
	AG	Dueholm, K.L. et al., "Peptide Nucleic Acid (PNA) with a Chiral Backbone Based on Alanine", <i>Biorg. Med. Chem. Letts.</i> , <b>1994</b> , 4, 1077-1080
	AH	Eckhardt, H. et al., "Blocking of the Initiation of Protein Biosynthesis by a Pentanucleotide Complementary to the 3' End of <i>Escherichia coli</i> 16 S rRNA", <i>J. Biol. Chem.</i> , <b>1979</b> , 254, 11185-11188
	AI	Egholm, M. et. al., "Efficient pH-independent sequence-specific DNA binding by pseudoisocytosine-containing bis-PNA", <i>Nucl. Acids Res.</i> , <b>1995</b> , 23, 217-222
V	AJ	Egholm, P.E. et. al., "Sequence-Selective Recognition of DNA by Strand Displacement with a Thymine-Substituted Polyamide", <i>Science</i> , <b>1991</b> , 254, 1497-1500

EXAMINER

*Andi Mander*

DATE CONSIDERED **9-6-01**



RECEIVED

NOV 30 2000

Sheet 2 of 6  
TECH CENTER 1600/2900

## Form PTO-1449 Modified

Docket No.  
ISPA-3292Serial No.  
09/486,623List of Patent and Publications  
Cited by Applicant  
(Use several sheets if necessary)Applicant  
Peter E. Nielsen, et al.U.S. Department of Commerce  
Patent and Trademark OfficeFiling Date  
July 6, 2000Group 1631  
~~1230~~

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	AK	Egholm, M. et al., "Peptide Nucleic Acids (PNA). Oligonucleotide Analogues with an Achiral Peptide Backbone", <i>J. Am. Chem. Soc.</i> , <b>1992</b> , 114, 1895-1897
	AL	Egholm, M. et al., "Recognition of Guanine and Adenine in DNA by Cytosine and Thymine Containing Peptide Nucleic Acids (PNA)", <i>J. Am. Chem. Soc.</i> , <b>1992</b> , 114, 9677-9678
	AM	Egholm, M. et al., "Peptide Nucleic Acids containing Adenine or Guanine recognize Thymine and Cytosine in Complementary DNA Sequences", <i>J. Chem. Soc. Chem. Comm.</i> , <b>1993</b> , 800-801
	AN	Egholm, M. et al., "PNA hybridizes to complementary oligonucleotides obeying the Watson-Crick hydrogen bonding rules", <i>Nature</i> , <b>1993</b> , 365, 566-568
	AO	Ellman, J. et. al., "Biosynthetic Method for Introducing Unnatural Amino Acids Site-Specifically into Proteins", <i>Methods in Enzymol.</i> , <b>1991</b> , 202, 301-337
	AP	Engberg, J., et al., "Structural Map of 23S rRNA," Chapter 11, <i>The Ribosome</i> , Hill, et al. (eds.), <b>1989</b> , Am. Soc. Microbiol., Washington, D.C. 168-179
	AQ	Fissekis, J.D. et al., "Synthesis of 5-Carboxymethyluridine. A Nucleoside from Transfer Ribonucleic Acid", <i>Biochem.</i> , <b>1970</b> , 9, 3136-3142
	AR	Hanvey, J.C. et al., "Antisense and Antigene Properties of Peptide Nucleic Acids", <i>Science</i> , <b>1992</b> , 258, 1481-1485
	AS	Helene, C. et al., "Specific regulation of gene expression by antisense, sense, and antigene nucleic acids", <i>Biochimica et Biophysica Acta</i> , <b>1990</b> , 1049, 99-125
✓	AT	Hill, W.E., "Probing Ribosome Structure and Function by Using Short Complementary DNA Oligomers", Chapter 18, <i>The Ribosome</i> , Hill et. al. eds., <b>1989</b> , Am. Soc. Microbiol., Washington, D.C., 253-261
EXAMINER <i>Adam Marshall</i>		DATE CONSIDERED <i>9-6-01</i>



RECEIVED

NOV 30 2000

Sheet 3 of 6

TECH CENTER 1600/2900

<b>Form PTO-1449 Modified</b>		Docket No. <b>ISPA-3292</b>	Serial No. <b>09/486,623</b>
List of Patent and Publications Cited by Applicant (Use several sheets if necessary)		Applicant <b>Peter E. Nielsen, et al.</b>	
U.S. Department of Commerce Patent and Trademark Office		Filing Date <b>July 6, 2000</b>	Group <b>1631</b>
<b>OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)</b>			
AM	AU	Hyrrup, B., et al., "Modification of the Binding Affinity of Peptide Nucleic Acids (PNA). PNA with Extended Backbones consisting of 2-Aminoethyl- $\beta$ -alanine or 3-Aminopropylglycine Units," <i>J. Chem. Soc. Chem. Commun.</i> , <b>1993</b> , 518-519	
	AV	Impacts of Antibiotic-Resistant Bacteria, <b>September 1995</b> , OTA-H-629, GPO stock #052-003-001446-7, pages 1-8	
	AW	Jarayaraman, K., et al., "Selective inhibition of Escherichia coli protein synthesis and growth by nonionic oligonucleotides complementary of the 3' end of 16S rRNA," <i>Proc. Natl. Acad. Sci.</i> , <b>1981</b> , 78, 1537-1541	
	AX	Kingman, S., "Resistance a European Problem, Too", <i>Science</i> , <b>1994</b> , 264, 363-365	
	AY	Knudsen, H. et al., "Antisense Properties of duplex-and triplex-forming PNA", <i>Nucl. Acids Res.</i> , <b>1996</b> , 24, 494-500	
	AZ	Kobayashi, S. et. al., "Simple Assay of $\beta$ -Lactamase with Agar Medium Containing a Chromogenic Cephalosporin, Pyridinium-2Azo- <i>p</i> -Dimethylaniline Chromophore (PADAC)", <i>Antimicrob. Agents Chemotherapy</i> , <b>1988</b> , 32, 1040-1045	
*	BA	Korobkova, E.S., et. al., <i>Mikrobiol. Z.</i> , <b>1995</b> , 57, 30-36	
	BB	Lagriffoul, P.H. et. al., "The Synthesis, Co-Oligomerization and Hybridization of a Thymine-Thymine Heterodimer Containing PNA", <i>Bioorg. Med. &amp; Chem. Letts.</i> , <b>1994</b> , 4, 1081-1082	
	BC	Meyer, H.A. et. al., "Effects of antisense DNA against the $\alpha$ -sarcin stem-loop structure of the ribosomal 23S rRNA", <i>Nucl. Acids Res.</i> , <b>1996</b> , 24, 3996-4002	
✓	BD	Miller, J.H., "Assay of $\beta$ -Galactosidase", <i>Experiments in Molecular Genetics</i> , <b>1972</b> , Cold Spring Harbor, New York, 352-355	
EXAMINER <i>Andi Mascher</i>		DATE CONSIDERED <b>9-6-01</b>	

\* Reference BA which is in the Russian language is believed to relate to oligodeoxyribonucleotides complementary to the 3' terminal segment of the 16s-rRNA in molecules which have shown suppression of translation in their ribosomes in an in-vitro assay.



RECEIVED

NOV 30 2000

Sheet 4 of 6  
TECH CENTER 1600/2900**Form PTO-1449 Modified**Docket No.  
**ISPA-3292**Serial No.  
**09/486,623**List of Patent and Publications  
Cited by Applicant  
(Use several sheets if necessary)Applicant  
**Peter E. Nielsen, et al.**U.S. Department of Commerce  
Patent and Trademark OfficeFiling Date  
**July 6, 2000**Group  
~~1270~~ **1631****OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

AM	BE	Miller, J.H., "Episome Transfers: Direct Selection", <i>Experiments in Molecular Genetics</i> , <b>1972</b> , Cold Spring Harbor, New York, 82-85
	BF	Nielsen, P.E. et al., "Sequence-Selective Recognition of DNA restriction enzyme cleavage by PNA", <i>Nucl. Acids Res.</i> , <b>1993</b> , <i>21</i> , 197-200
	BG	Nielsen, P.E. et al., "Sequence-specific transcription arrest by peptide nucleic acid bound to the DNA template strand", <i>Gene</i> , <b>1994</b> , <i>149</i> , 139-145
	BH	Noller, H.F. et. al., "Unusual Resistance of Peptidyl Transferase to Protein Extraction Procedures", <i>Science</i> , <b>1992</b> , <i>256</i> , 1416-1419
	BI	Norton, J.C. et. al., "Inhibition of human telomerase activity by peptide nucleic acids", <i>Nature Biotechnology</i> , <b>1996</b> , <i>14</i> , 615-619
	BJ	Rahman, M.A. et. al., "Antibacterial Activity and Inhibition of Protein Synthesis in <i>Escherichia coli</i> by antisense DNA Analogs", <i>Antisense Research and Development</i> , <b>1991</b> , <i>1</i> , 319-327
	BK	Sampson, B.A. et al., "Identification and Characterization of a New Gene of <i>Escherichia coli</i> K-12 Involved in Outer Membrane Permeability", <i>Genetics</i> , <b>1989</b> , <i>122</i> , 491-501
	BL	Saxena, S.K. et al., "Microinjected Oligonucleotides Complementary to the $\alpha$ -Sarcin Loop of 28 S RNA Abolish Protein Synthesis in <i>Xenopus</i> Oocytes", <i>J. Boil. Chem.</i> , <b>1990</b> , <i>265</i> , 3263-3269
	BM	Sekiguchi, M. et. al., "Mutants of <i>Escherichia coli</i> Permeable to Actinomycin", <i>Proc. Nat. Acad. Sci.</i> , <b>1967</b> , <i>58</i> , 2315-2320
↓	BN	Sharma, H.W. et al., "The therapeutic potential of antisense oligonucleotides", <i>BioEssays</i> , <b>1995</b> , <i>17</i> , 1055-1063

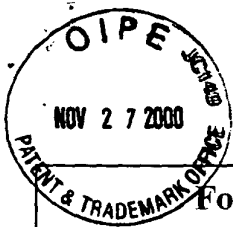
EXAMINER *Ardi Manohar*DATE CONSIDERED *9-6-01*

RECEIVED

NOV 30 2000

Sheet 5 of 6

TECH CENTER 1600/2900

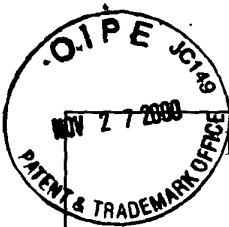


## Form PTO-1449 Modified

Docket No.  
ISPA-3292Serial No.  
09/486,623List of Patent and Publications  
Cited by Applicant  
(Use several sheets if necessary)Applicant  
Peter E. Nielsen, et al.U.S. Department of Commerce  
Patent and Trademark OfficeFiling Date  
July 6, 2000Group 1631  
~~1470~~

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

AM	BO	Sorensen, M.A. et. al., "Codon Usage Determines Translation Rate in <i>Escherichia coli</i> ", <i>J. Mol. Biol.</i> , <b>1989</b> , 207, 365-377
	BP	Steitz, J.A. et al., "How ribosomes select initiator regions in mRNA: Base pair formation between the 3' terminus of 16S rRNA and the mRNA during initiation of protein synthesis in <i>Escherichia coli</i> ", <i>Proc. Natl. Acad. Sci.</i> , <b>1975</b> , 72, 4634-4738
	BQ	Taniguchi, T. et al., "Inhibition of Q $\beta$ RNA 70S ribosome initiation complex formation by an oligonucleotide complementary to the 3' terminal region of <i>E. coli</i> 16S ribosomal RNA", <i>Nature</i> , <b>1978</b> , 275, 770-772
	BR	Travis, J., "Reviving the Antibiotic Miracle?", <i>Science</i> , <b>1994</b> , 264, 360-362
	BS	Uhlmann, E. et al., "Antisense Oligonucleotides: A New Therapeutic Principle", <i>Chem. Reviews</i> , <b>1990</b> , 90, 544-584
	BT	Walker, K., et. al., "Inhibition of Protein Synthesis by Anti-5.8S rRNA Oligodeoxyribonucleotides", <i>J. Biol. Chem.</i> , <b>1990</b> , 265, 2428-2430
V	BU	Wren, B.W. et. al., "A PCR-Based Strategy for the Rapid Construction of Defined Bacterial Deletion Mutants", <i>BioTechniques</i> , <b>1994</b> , 16, 994-996
EXAMINER <i>Adin Mander</i>		DATE CONSIDERED 9-6-01



RECEIVED

Sheet 2 of 6  
NOV 27 2000

## Form PTO-1449 Modified

List of Patent and Publications  
Cited by Applicant  
(Use several sheets if necessary)

U.S. Department of Commerce  
Patent and Trademark Office

Docket No.  
ISPA-3292

Serial No.  
09/486,623 CENTER 1600/2000

Applicant  
Peter E. Nielsen, et al.

Filing Date  
July 6, 2000

Group 1631  
~~1270~~

## U. S. PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Name	Class	Subclass
AM	BV	5,220,014	06/15/93	Ackerman, et al.	536	24.5
	BW	5,447,914	09/05/95	Travis, et al.	514	16
	BX	5,539,082	07/23/96	Nielsen, et al.	530	300
	BY	5,539,083	07/23/96	Cook, et al.	530	333
	BZ	5,641,625	06/24/97	Ecker, et al.	435	6
	CA	5,645,985	07/08/97	Froehler, et al.	435	6
	CB	5,650,321	07/22/97	Levy	435	252.3
	CC	5,766,855	06/16/98	Buchardt, et al.	435	6

## FOREIGN PATENT DOCUMENTS

Examiner Initial		Document No.	Date	Country	Translation YES NO	
AM	CD	WO 86/05518	09/25/86	PCT	X	
AM	CE	WO 92/20702	11/26/92	PCT	X	

EXAMINER *Adin Mascher*

DATE CONSIDERED 9-6-01